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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,642	06/20/2001	Darrell W. Kelsoe		4543

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GREGORY M. FRIEDLANDER & ASSOCIATES, P.C.  
11 SOUTH FLORIDA STREET  
MOBILE, AL 36606-1934

EXAMINER

CAMERON, ERMA C

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/02/2004

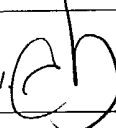
Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/885,642

Applicant(s)

KELSOE, DARRELL W. 

Examiner

Erma Cameron

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 72-78, 80-96, 98-101, 104-108, 110-112 and 119-131 is/are pending in the application.
- 4a) Of the above claim(s) 80 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 72-78, 81-96, 98-101, 104-108, 110-112 and 119-131 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### *Claims*

*The following problems exist in the claims as written in the marked up version and clean version of the 11/18/2003 amendment:*

*Claims 126-131 exist in the marked up versions but not the clean version. The applicant has stated in the 11/18/2003 amendment that claims 119-125 have been added, but additional claims 126-131 exist in the marked up version.*

*Applicant has requested in the 11/18/2003 amendment that claims 79, 99, 102-103 and 113-118 be canceled. However claim 97 is canceled in the clean version but is present in the marked up version. Claims 113-118 are canceled in the clean version but are present in the marked up version.*

*For examination purposes, the examiner considers that claims 72-78, 80-96, 98-101, 104-108, 110-112 and 119-131 are in the application and will be examined.*

### *Election/Restrictions*

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

- trivalent, tetravalent or pentavalent atoms,

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- type of functional group,
- acid or base catalyst,
- structure of solute compound,
- catalyst added to the solution prior to application or added to the wood after application of solution to the wood.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the

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examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Gregory Friedlander on December 30, 2003 a provisional election was made with traverse to prosecute the invention of tetravalent atoms, alkoxy functional group, catalyst added to the solution prior to application to wood,  $R_3XaXb$  as the solute compound, and acid catalyst.

Claim 80 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected species (a base catalyst).

The applicant also supplied a confirmation in writing on 10/31/2002.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- a) The Brief Description of the Drawings does not agree with the drawings themselves. The Description contains Figures 6a, 6b and 6c, whereas the drawings are labeled 6, 6a and 6b.
- b) The specification discusses Figures 6a, 6b and 6c, but not Figure 6.

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c) Figure 13: 6 and 8 are not described in the specification.

d) Figure 14 is referred to on page 30 as portraying chemical reactions. However, Figure 14 appears to be a piece of equipment.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The applicant has stated in the 11/18/2003 amendment (11:1-4) that drawings have been sent in. However, they have not been received.

### *Specification*

4. Note that item #19 to page 24, lines 22-25 (4/25/2003 response) has not been entered because it does not constitute a complete paragraph.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 72-78, 81-96, 98-101, 104-108, 110-112 and 119-131 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the

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specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a) Page 12, line 18 and page 13, line 13: it is not clear what is meant by ...absorbing sodium silicate... or ...WPTC may introduce Borax and Sodium Silicate into the wood...

Sodium silicate is not mentioned elsewhere in the specification as being one of the chemicals used in the treatment.

**This has not been addressed from the 6/18/2003 final rejection.**

7. The rejection of Claims 72-78, 80-101 and 104-118 under 35 U.S.C. 112, first paragraph, ("hydrophilic") is withdrawn because of the 11/18/2003 amendment.

8. The rejection of Claims 74, 75, 78 and 117 under 35 U.S.C. 112, first paragraph, ("exothermic or self-initiating") is withdrawn because of the 11/18/2003 amendment.

9. Claims 73, 76 and 92 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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The examiner cannot find where in the specification as originally filed there is a description of the solute being monomeric before application to the wood. In fact, Figures 7-10 show the solute polymerizing before reacting with the wood.

This appears to be new matter.

**This has not been addressed in the 11/18/2003 amendment.**

10. The rejection of Claims 82-84, 86-88 and 111-118 under 35 U.S.C. 112, first paragraph, ("pro-catalyst and non-pro-catalyst") is withdrawn because of the amendment filed 11/18/2003.

11. Claim 104 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not disclose that the functional groups are solvated by water.

This appears to be new matter.

**This was not addressed in the 11/18/2003 amendment.**

12. Claim 99 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled

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in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not disclose cyclic interlocking molecules having as a part of the cyclic structure at least two carbons within the cellulose and at least two of the atoms from the functional groups consisting of trivalent, tetravalent and pentavalent atoms.

This appears to be new matter.

**This was not addressed in the 11/18/2003 amendment.**

13. The rejection of Claims 111-117 under 35 U.S.C. 112, first paragraph, ("pro-catalyst reactant" and any "non-pro-catalyst reactant") is withdrawn because of the amendment filed 11/18/2003

14. Claims 72-78, 81-96, 98-101, 104-108, 110-112 and 119-131 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The following is new matter that was added to the claims in the 11/18/2003 amendment but that was not in the application as originally filed:

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Claim 72 covalently reacting said functional groups using the solvated acid with the cellulose

Claim 74 acid reacting with the cellulose

Claim 87 solute comprises a non-catalyt producing molecule which reacts to covalently bond with wood cellulose

Claim 88 to produce heat with wood cellulose

Claim 92 water based formation of oligomers

Claim 111 solvating the acid with the water in the wood to produce a solvated acid

Claim 111 to produce heat and a silicone cellulose bond

Claim 122 molecule comprised of a metal and a halogen

Claim 124 produces an acid in the presence of water in the wood

Claim 125 produces an acid in the presence of water in the wood

Claim 128 molecule which produces an acid in the presence of water

Claim 131 hydroxyl and alkoxyl bonded tetravalent atoms

### ***Double Patenting***

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 72-78, 81-96, 98-101, 104-108, 110-112 and 119-131 are provisionally rejected under the judicially created doctrine of double patenting over claims 35, 39-40, 42, 44-45, 48, 49-51, 57-60, 62-63 and 65-67 of copending Application No. 09/788165. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: treating wood with a solution of tetravalent or pentavalent compound containing a functional group, and optionally a catalyst.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

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*Claim Rejections - 35 USC § 103*

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 72-78, 81-96, 98-101, 104-108, 111-112 and 119-131 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-318509.

'509 teaches impregnating wood (which may be humidified (page 13 of translation)) with an alcohol or acetone solution (p13) comprising a metal oxide, trimethoxy silane (p 22) and an acid catalyst (p 14, 16). The silane condenses with itself and/or reacts with the hydroxyl of the wood (p 8). The wood has fire retardant properties (p 8). The property of the silane reacting with the wood to produce heat would be inherent to the reaction.

19. Claim 110 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-318509 taken in view of 3682675 (Myers) or Ogiso et al (Mokuzai Gakkaishi, 39(3), pp 301-307, 1993).

'509 is applied here for the reasons given above.

'509 fails to teach using ultrasonics.

'675 teaches that ultrasonics helps to promote acceptance of chemical solutions, of substances such as borax, into wood (2:22-34; 3:4-9).

Ogiso teaches using ultrasonics to aid in the penetration of a silane solution into wood (see Abstract, page 302).

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It would have been obvious to one of ordinary skill in the art to have incorporated the ultrasonics of '675 or Ogiso into the '509 process because of the teaching that ultrasonics helps promote acceptance into the wood

***Response to Amendment***

20. The affidavits filed on 11/18/2003 under 37 CFR 1.131 have been considered but are ineffective to overcome the Saka (JP 58-318509) reference.

The affidavits do not used the full range of catalysts suggested by JP 08-318509. See paged 14 of the translation ("using an acidic catalyst...or a catalyst mixture of a metal organic acid salt...").

***Conclusion***

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erma Cameron whose telephone number is 571-272-1416. The examiner can normally be reached on 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571-272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**ERMA CAMERON**  
**PRIMARY EXAMINER**

February 23, 2004

Erma Cameron  
Primary Examiner  
Art Unit 1762